

DESIGN, TYPES, AND FEATURES

SINGLE-ROW DEEP GROOVE BALL BEARINGS

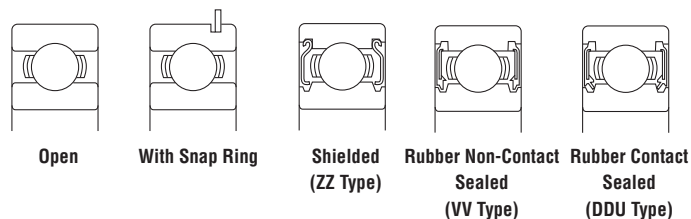
Single-row deep groove ball bearings are classified into the types shown below.

The proper amount of good quality grease is packed in shielded and sealed ball bearings. A comparison of the features of each type is shown in Table 1.

Table 1 Features of Sealed Ball Bearings

	Shielded (ZZ Type)	Rubber Non-Contact Seal (VV Type)	Rubber Contact Seal (DDU Type)
Torque	Low	Low	Higher than ZZ and VV types due to contact seal
Speed capability	Good	Good	Limited by contact seals
Grease-sealing effectiveness	Good	Better than ZZ type	Slightly better than VV type
Dust resistance	Good	Better than ZZ type (usable in moderately dusty environments)	Best (usable even in very dusty environments)
Water resistance	Not suitable	Not suitable	Good (usable even if fluid is splashed on bearing)
Operating temperature ⁽¹⁾	-10 to +110 °C	-10 to +110 °C	-10 to +100 °C

Note ⁽¹⁾ The above temperature range applies to standard bearings. By using cold- or heat-resistant grease or changing the type of rubber, the operating temperature range can be extended. Please contact NSK for such applications.



Pressed cages are usually used for deep groove ball bearings. For large bearings, machined brass cages are used (refer to Table 2).

Machined cages are also used for high-speed applications.

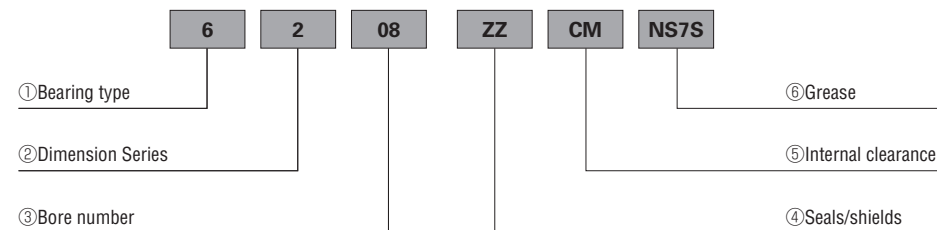
Table 2 Standard Cages for Deep Groove Ball Bearings

Series	Pressed Steel Cages	Machined Brass Cages
68	6800 – 6838	6840 – 68/800
69	6900 – 6936	6938 – 69/800
160	16001 – 16026	16028 – 16064
60	6000 – 6040	6044 – 60/670
62	6200 – 6240	6244 – 6272
63	6300 – 6332	6334 – 6356

Formulation of Bearing Designations

Single-row deep groove ball bearings

Example:



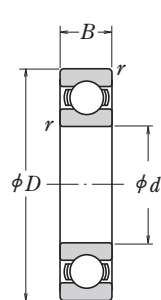
- ① Bearing type 6: Single-row deep groove ball bearings
- ② Dimension Series 2: 02 Series, 3: 03 Series, 9: 19 Series, 0: 10 Series
- ③ Bore number Bore diameter for 03 and under—00: 10 mm, 01: 12 mm, 02: 15 mm, 03: 17 mm
04 and over—Bore diameter = Bore number × 5 (mm)
- ④ Seals/shields ZZ: Shield on both sides, DDU: Rubber contact seal on both sides, VV: Rubber non-contact seal on both sides, Z: Shield on one side, DU: Rubber contact seal on one side, V: Rubber non-contact seal on one side
- ⑤ Internal clearance Omitted: CN clearance*¹, C3: Clearance greater than CN, C4: Clearance greater than C3, CM: For electric motors*¹
- ⑥ Grease designation*² NS7: NS HI-LUBE

*¹ CM clearance may be used instead of CN clearance (the reverse is not possible).

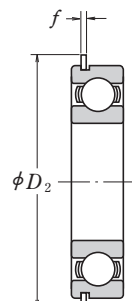
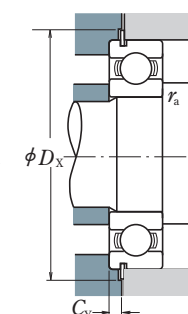
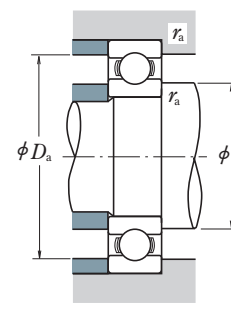
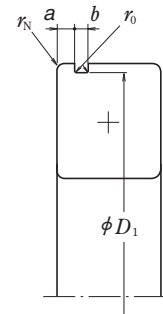
*² The grease designation is required when seals/shields are used on both sides.

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 20 – 30 mm



Open

Shielded
ZZNon-Contact
Sealed
VVContact
Sealed
DD · DDUWith Snap
Ring Groove
NWith Snap
Ring
NR

Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Static Equivalent Load

$$\frac{F_a}{F_r} > 0.8, P_0 = 0.6F_r + 0.5F_a$$

$$\frac{F_a}{F_r} \leq 0.8, P_0 = F_r$$

Boundary Dimensions (mm)				Basic Load Ratings (N)		Factor	Limiting Speeds (min ⁻¹)			Bearing Designations				With Snap Ring Groove	With Snap Ring	Snap Ring Groove Dimensions (1) (mm)					Snap Ring (1) Dimensions (mm)		Abutment and Fillet Dimensions (mm)						Mass (kg)
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>C_r</i>	<i>C</i> _{0r}		Grease		Oil	Open	Shielded	Sealed	<i>a</i> max.			<i>b</i> min.	<i>D</i> ₁ max.	<i>r</i> ₀ max.	<i>r</i> _N min.	<i>D</i> ₂ max.	<i>f</i> max.	<i>d</i> _a (2) min.	<i>D</i> _a (2) max.	<i>r</i> _a max.	<i>D</i> _x min.	<i>C</i> _Y max.	approx.		
20	32	7	0.3	4 400	2 470	15.5	22 000	13 000	26 000	6804	ZZ	VV	DD	N	NR	1.30	0.95	30.7	0.25	0.3	34.8	0.85	22	22	30	0.3	35.5	1.8	0.017
	37	9	0.3	7 000	3 700	14.7	19 000	12 000	22 000	6904	ZZ	VV	DDU	N	NR	1.70	0.95	35.7	0.25	0.3	39.8	0.85	22	24	35	0.3	40.5	2.3	0.037
	42	8	0.3	8 700	4 450	14.5	18 000	—	20 000	16004	—	—	—	—	—	—	—	—	—	—	—	22	—	40	0.3	—	—	—	0.048
	42	12	0.6	10 300	5 000	13.8	20 000	11 000	24 000	6004	ZZ	VV	DDU	N	NR	2.06	1.35	39.75	0.4	0.5	46.3	1.12	24	25.5	38	0.6	47	2.9	0.068
	47	14	1	14 100	6 600	13.1	17 000	11 000	20 000	6204	ZZ	VV	DDU	N	NR	2.46	1.35	44.6	0.4	0.5	52.7	1.12	25	26.5	42	1	53.5	3.3	0.107
	52	15	1.1	17 500	7 900	12.4	16 000	10 000	19 000	6304	ZZ	VV	DDU	N	NR	2.46	1.35	49.73	0.4	0.5	57.9	1.12	26.5	28	45.5	1	58.5	3.3	0.145
22	44	12	0.6	10 300	5 050	14.0	17 000	11 000	20 000	60/22	ZZ	VV	DDU	N	NR	2.06	1.35	41.75	0.4	0.5	48.3	1.12	26	26.5	40	0.6	49	2.9	0.074
	50	14	1	14 200	6 800	13.5	14 000	9 500	16 000	62/22	ZZ	VV	DDU	N	NR	2.46	1.35	47.6	0.4	0.5	55.7	1.12	27	29.5	45	1	56.5	3.3	0.119
	56	16	1.1	20 200	9 250	12.4	13 000	9 500	16 000	63/22	ZZ	VV	DDU	N	NR	2.46	1.35	53.6	0.4	0.5	61.7	1.12	28.5	30.5	49.5	1	62.5	3.3	0.179
	47	12	0.6	11 100	5 850	14.5	18 000	9 500	22 000	6005	ZZ	VV	DDU	N	NR	2.06	1.35	44.6	0.4	0.5	52.7	1.12	29	30	43	0.6	53.5	2.9	0.079
25	42	9	0.3	4 950	3 150	16.1	18 000	10 000	22 000	6805	ZZ	VV	DD	N	NR	1.30	0.95	35.7	0.25	0.3	39.8	0.85	27	27	35	0.3	40.5	1.8	0.021
	42	9	0.3	7 750	4 550	15.4	16 000	10 000	19 000	6905	ZZ	VV	DDU	N ⁽³⁾	NR ⁽³⁾	1.70	0.95	40.7	0.25	0.3	44.8	0.85	27	28.5	40	0.3	45.5	2.3	0.042
	47	8	0.3	9 750	5 600	15.1	15 000	—	18 000	16005	—	—	—	—	—	—	—	—	—	—	—	27	—	45	0.3	—	—	—	0.059
	52	15	1	15 400	7 850	13.9	15 000	9 000	18 000	6205	ZZ	VV	DDU	N	NR	2.46	1.35	49.73	0.4	0.5	57.9	1.12	30	32	47	1	58.5	3.3	0.129
	62	17	1.1	22 600	11 200	13.2	13 000	8 000	16 000	6305	ZZ	VV	DDU	N	NR	3.28	1.9	59.61	0.6	0.5	67.7	1.7	31.5	36	55.5	1	68.5	4.6	0.235
	58	16	1	18 300	9 500	13.9	12 000	8 000	14 000	62/28	ZZ	VV	DDU	N	NR	2.46	1.35	55.6	0.4	0.5	63.7	1.12	33	35.5	53	1	64.5	3.3	0.175
28	68	18	1.1	29 400	14 000	12.4	10 000	7 500	13 000	63/28	ZZ	VV	DDU	N	NR	3.28	1.9	64.82	0.6	0.5	74.6	1.7	34.5	38	61.5	1	76	4.6	0.287
	42	7	0.3	5 200	3 650	16.4	15 000	9 000	18 000	6806	ZZ	VV	DD	N	NR	1.30	0.95	40.7	0.25	0.3	44.8	0.85	32	32	40	0.3	45.5	1.8	0.024
	47	9	0.3	7 950	5 000	15.8	14 000	8 500	17 000	6906	ZZ	VV	DDU	N	NR	1.70	0.95	45.7	0.25	0.3	49.8	0.85	32	34	45	0.3	50.5	2.3	0.052
30	55	9	0.3	12 400	7 350	15.2	13 000	—	15 000	16006	—	—	—	—	—	—	—	—	—	—	—	32	—	53	0.3	—	—	—	0.087
	55	13	1	14 600	8 300	14.7	15 000	8 000	18 000	6006	ZZ	VV	DDU	N	NR	2.08	1.35	52.6	0.4	0.5	60.7	1.12	35	36.5	50	1	61.5	2.9	0.116
	62	16	1	21 400	11 300	13.8	12 000	7 500	15 000	6206	ZZ	VV	DDU	N	NR	3.28	1.9	59.61	0.6	0.5	67.7	1.7	35	38.5	57	1	68.5	4.6	0.199
	72	19	1.1	29 300	15 000	13.3	11 000	6 700	13 000	6306	ZZ	VV	DDU	N	NR	3.28	1.9	68.81	0.6	0.5	78.6	1.7	36.5	42.5	65.5	1	80	4.6	0.345

Notes (1) For tolerances of snap ring grooves and snap ring dimensions, refer to Pages A116 to A119.

(2) When heavy axial loads are applied, d_a and D_a can be adjusted up to the shoulder diameter of the races. Please consult NSK for details.

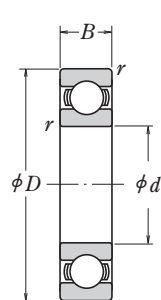
(3) Ring types N and NR are applicable only to open bearings. Please consult NSK about the snap ring groove dimensions of sealed or shielded bearings.

Remarks 1. Diameter Series 7 (extra-thin wall) bearings are also available; please contact NSK for details.

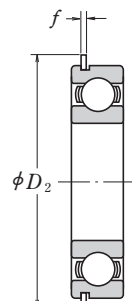
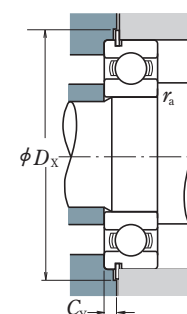
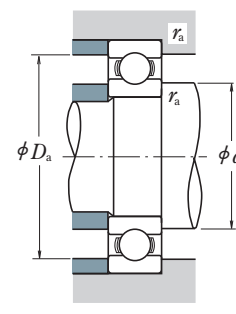
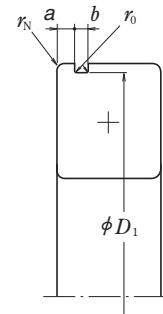
2. When using bearings with rotating outer rings, contact NSK if they are sealed, shielded, or have snap rings.

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 32 – 45 mm



Open

Shielded
ZZNon-Contact
Sealed
VVContact
Sealed
DD · DDUWith Snap
Ring Groove
NWith Snap
Ring
NR

Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Static Equivalent Load

$$\frac{F_a}{F_r} > 0.8, P_0 = 0.6F_r + 0.5F_a$$

$$\frac{F_a}{F_r} \leq 0.8, P_0 = F_r$$

Boundary Dimensions (mm)				Basic Load Ratings (N)		Factor	Limiting Speeds (min ⁻¹)			Bearing Designations				With Snap Ring Groove	With Snap Ring	Snap Ring Groove Dimensions ⁽¹⁾ (mm)					Snap Ring ⁽¹⁾ Dimensions (mm)		Abutment and Fillet Dimensions (mm)						Mass (kg) approx.
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>C_r</i>	<i>C_{0r}</i>		Grease		Oil	Open	Shielded	Sealed	<i>a</i> max.			<i>b</i> min.	<i>D</i> ₁ max.	<i>r</i> ₀ max.	<i>r</i> _N min.	<i>D</i> ₂ max.	<i>f</i> max.	<i>d</i> _a ⁽²⁾ min.	<i>d</i> _a ⁽²⁾ max.	<i>r</i> _a max.	<i>D</i> _x min.	<i>C</i> _Y max.			
32	58	13	1	16 600	9 150	14.5	12 000	7 500	14 000	60/32	ZZ	VV	DDU	N	NR	2.08	1.35	55.6	0.4	0.5	63.7	1.12	37	38.5	53	1	64.5	2.9	0.122
	65	17	1	22 800	11 600	13.6	10 000	7 100	12 000	62/32	ZZ	VV	DDU	N	NR	3.28	1.9	62.6	0.6	0.5	70.7	1.7	37	40	60	1	71.5	4.6	0.225
	75	20	1.1	33 000	17 000	13.2	9 000	6 300	11 000	63/32	ZZ	VV	DDU	N	NR	3.28	1.9	71.83	0.6	0.5	81.6	1.7	38.5	44.5	68.5	1	83	4.6	0.389
35	47	7	0.3	5 400	4 100	16.7	14 000	7 500	16 000	6807	ZZ	VV	DD	N	NR	1.30	0.95	45.7	0.25	0.3	49.8	0.85	37	37	45	0.3	50.5	1.8	0.027
	55	10	0.6	11 600	7 250	15.5	12 000	7 500	15 000	6907	ZZ	VV	DDU	N	NR	1.70	0.95	53.7	0.25	0.5	57.8	0.85	39	39	51	0.6	58.5	2.3	0.075
	62	9	0.3	12 800	8 200	15.6	11 000	—	13 000	16007	—	—	—	—	—	—	—	—	—	—	—	37	—	60	0.3	—	—	0.107	
40	62	14	1	17 600	10 300	14.8	13 000	6 700	15 000	6007	ZZ	VV	DDU	N	NR	2.08	1.9	59.61	0.6	0.5	67.7	1.7	40	41.5	57	1	68.5	3.4	0.151
	72	17	1.1	28 200	15 300	13.8	11 000	6 300	13 000	6207	ZZ	VV	DDU	N	NR	3.28	1.9	68.81	0.6	0.5	78.6	1.7	41.5	44.5	65.5	1	80	4.6	0.284
	80	21	1.5	36 500	19 200	13.2	10 000	6 000	12 000	6307	ZZ	VV	DDU	N	NR	3.28	1.9	76.81	0.6	0.5	86.6	1.7	43	47	72	1.5	88	4.6	0.464
40	52	7	0.3	7 000	5 550	17.0	12 000	6 700	14 000	6808	ZZ	VV	DD	N	NR	1.30	0.95	50.7	0.25	0.3	54.8	0.85	42	42	50	0.3	55.5	1.8	0.031
	62	12	0.6	15 000	10 000	15.7	11 000	6 300	13 000	6908	ZZ	VV	DDU	N	NR	1.70	0.95	60.7	0.25	0.5	64.8	0.85	44	46	58	0.6	65.5	2.3	0.112
	68	9	0.3	13 900	9 650	16.0	10 000	—	12 000	16008	—	—	—	—	—	—	—	—	—	—	—	42	—	66	0.3	—	—	0.13	
45	68	15	1	18 400	11 500	15.3	12 000	6 000	14 000	6008	ZZ	VV	DDU	N	NR	2.49	1.9	64.82	0.6	0.5	74.6	1.7	45	47.5	63	1	76	3.8	0.19
	80	18	1.1	32 000	17 900	14.0	9 500	5 600	12 000	6208	ZZ	VV	DDU	N	NR	3.28	1.9	76.81	0.6	0.5	86.6	1.7	46.5	50.5	73.5	1	88	4.6	0.366
	90	23	1.5	45 000	24 000	13.2	9 000	5 300	11 000	6308	ZZ	VV	DDU	N	NR	3.28	2.7	86.79	0.6	0.5	96.5	2.46	48	53	82	1.5	98	5.4	0.636
45	58	7	0.3	7 250	6 150	17.2	11 000	6 000	13 000	6809	ZZ	VV	DD	N	NR	1.30	0.95	56.7	0.25	0.3	60.8	0.85	47	47.5	56	0.3	61.5	1.8	0.038
	68	12	0.6	15 500	10 900	15.9	9 500	5 600	12 000	6909	ZZ	VV	DDU	N	NR	1.70	0.95	66.7	0.25	0.3 ⁽³⁾	70.8	0.85	49	50	64	0.6	72	2.3	0.126
	75	10	0.6	16 400	11 400	15.9	9 000	—	11 000	16009	—	—	—	—	—	—	—	—	—	—	—	49	—	71	0.6	—	—	0.167	
45	75	16	1	23 000	15 200	15.3	10 000	5 300	12 000	6009	ZZ	VV	DDU	N	NR	2.49	1.9	71.83	0.6	0.5	81.6	1.7	50	53.5	70	1	83	3.8	0.241
	85	19	1.1	34 500	20 400	14.4	9 000	5 300	11 000	6209	ZZ	VV	DDU	N	NR	3.28	1.9	81.81	0.6	0.5	91.6	1.7	51.5	55.5	78.5	1	93	4.6	0.42
	100	25	1.5	58 500	32 000	13.1	7 500	4 800	9 500	6309	ZZ	VV	DDU	N	NR	3.28	2.7	96.8	0.6	0.5	106.5	2.46	53	61.5	92	1.5	108	5.4	0.829

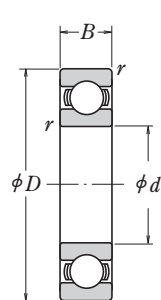
Notes ⁽¹⁾ For tolerances of snap ring grooves and snap ring dimensions, refer to Pages A116 to A119.⁽²⁾ When heavy axial loads are applied, d_a and D_a can be adjusted up to the shoulder diameter of the races. Please consult NSK for details.⁽³⁾ Does not conform to ISO464.

Remarks 1. Diameter Series 7 (extra-thin wall) bearings are also available; please contact NSK for details.

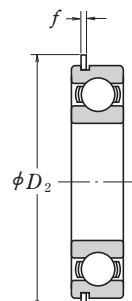
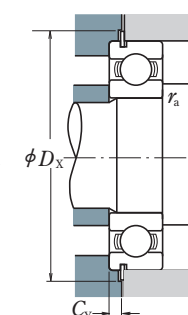
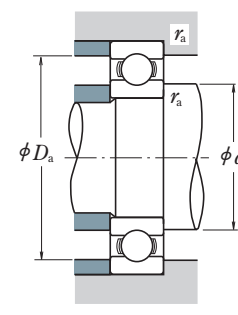
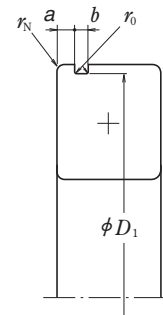
2. When using bearings with rotating outer rings, contact NSK if they are sealed, shielded, or have snap rings.

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 50 – 60 mm



Open

Shielded
ZZNon-Contact
Sealed
VVContact
Sealed
DD·DDUWith Snap
Ring Groove
NWith Snap Ring
NR

Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Static Equivalent Load

$$\frac{F_a}{F_r} > 0.8, P_0 = 0.6F_r + 0.5F_a$$

$$\frac{F_a}{F_r} \leq 0.8, P_0 = F_r$$

Boundary Dimensions (mm)				Basic Load Ratings (N)		Factor	Limiting Speeds (min ⁻¹)			Bearing Designations				With Snap Ring Groove	With Snap Ring	Snap Ring Groove Dimensions ⁽¹⁾ (mm)					Snap Ring ⁽¹⁾ Dimensions (mm)		Abutment and Fillet Dimensions (mm)						Mass (kg)
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>C_r</i>	<i>C_{0r}</i>	<i>f</i> ₀	Grease		Oil	Open	Shielded	Sealed	Open			Shielded	Sealed	<i>a</i> max.	<i>b</i> min.	<i>D</i> ₁ max.	<i>r</i> ₀ max.	<i>r</i> _N min.	<i>D</i> ₂ max.	<i>f</i> max.	<i>d</i> _a ⁽²⁾ min.	<i>d</i> _a ⁽²⁾ max.	<i>D</i> _a ⁽²⁾ max.	<i>r</i> _a max.	<i>D</i> _x min.
50	65	7	0.3	7 050	6 200	17.2	9 500	5 300	11 000	6810	ZZ	VV	DDU	N	NR	1.30	0.95	63.7	0.25	0.3	67.8	0.85	52	52.5	63	0.3	68.5	1.8	0.050
	72	12	0.6	16 000	11 700	16.1	9 000	5 300	11 000	6910	ZZ	VV	DDU	N	NR	1.70	0.95	70.7	0.25	0.5	74.8	0.85	54	55	68	0.6	76	2.3	0.135
	80	10	0.6	17 000	12 400	16.1	8 500	—	10 000	16010	—	—	—	—	—	—	—	—	—	—	—	—	54	—	76	0.6	—	—	0.175
	80	16	1	24 000	16 600	15.6	9 500	4 800	11 000	6010	ZZ	VV	DDU	N	NR	2.49	1.9	76.81	0.6	0.5	86.6	1.7	55	58.5	75	1	88	3.8	0.261
	90	20	1.1	38 500	23 200	14.4	8 000	4 800	10 000	6210	ZZ	VV	DDU	N	NR	3.28	2.7	86.79	0.6	0.5	96.5	2.46	56.5	60	83.5	1	98	5.4	0.459
	110	27	2	68 000	38 500	13.2	7 100	4 300	8 500	6310	ZZ	VV	DDU	N	NR	3.28	2.7	106.81	0.6	0.5	116.6	2.46	59	68	101	2	118	5.4	1.06
	72	9	0.3	9 700	8 500	17.0	8 500	4 800	10 000	6811	ZZ	VV	DDU	N	NR	1.70	0.95	70.7	0.25	0.3	74.8	0.85	57	59	70	0.3	76	2.3	0.081
	80	13	1	17 600	13 300	16.2	8 000	4 500	9 500	6911	ZZ	VV	DDU	N	NR	2.10	1.3	77.9	0.4	0.5	84.4	1.12	60	61.5	75	1	86	2.9	0.189
	90	11	0.6	21 400	16 300	16.2	7 500	—	9 000	16011	—	—	—	—	—	—	—	—	—	—	—	—	59	—	86	0.6	—	—	0.257
	90	18	1.1	31 000	21 200	15.3	8 500	4 500	10 000	6011	ZZ	VV	DDU	N	NR	2.87	2.7	86.79	0.6	0.5	96.5	2.46	61.5	64	83.5	1	98	5	0.381
	100	21	1.5	47 500	29 300	14.3	7 500	4 300	9 000	6211	ZZ	VV	DDU	N	NR	3.28	2.7	96.8	0.6	0.5	106.5	2.46	63	66.5	92	1.5	108	5.4	0.619
	120	29	2	78 500	44 500	13.1	6 700	4 000	8 000	6311	ZZ	VV	DDU	N	NR	4.06	3.1	115.21	0.6	0.5	129.7	2.82	64	72.5	111	2	131.5	6.5	1.37
60	78	10	0.3	12 600	10 900	16.9	8 000	4 500	9 500	6812	ZZ	VV	DD	N	NR	1.70	1.3	76.2	0.4	0.3	82.7	1.12	62	64	76	0.3	84	2.5	0.103
	85	13	1	21 400	16 300	16.2	7 500	4 300	9 000	6912	ZZ	VV	DDU	N	NR	2.10	1.3	82.9	0.4	0.5	89.4	1.12	65	66	80	1	91	2.9	0.192
	95	11	0.6	22 000	17 500	16.3	7 100	—	8 500	16012	—	—	—	—	—	—	—	—	—	—	—	—	64	—	91	0.6	—	—	0.281
	95	18	1.1	32 500	23 200	15.6	8 000	4 000	9 500	6012	ZZ	VV	DDU	N	NR	2.87	2.7	91.82	0.6	0.5	101.6	2.46	66.5	69	88.5	1	103	5	0.412
	110	22	1.5	57 500	36 000	14.3	6 700	3 800	8 000	6212	ZZ	VV	DDU	N	NR	3.28	2.7	106.81	0.6	0.5	116.6	2.46	68	74.5	102	1.5	118	5.4	0.783
	130	31	2.1	90 000	52 000	13.1	6 000	3 600	7 100	6312	ZZ	VV	DDU	N	NR	4.06	3.1	125.22	0.6	0.5	139.7	2.82	71	79	119	2	141.5	6.5	1.72

Notes (1) For tolerances of snap ring grooves and snap ring dimensions, refer to Pages A116 to A119.

(2) When heavy axial loads are applied, d_a and D_a can be adjusted up to the shoulder diameter of the races. Please consult NSK for details.

Remarks

1. Diameter Series 7 (extra-thin wall) bearings are also available; please contact NSK for details.
2. When using bearings with rotating outer rings, contact NSK if they are sealed, shielded, or have snap rings.
3. Please consult NSK about the snap ring groove dimensions of Dimension Series 18 and 19 sealed and shielded bearings when the diameter is 50 mm or more.